

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 acquiring data representing eye movements for multiple individuals;
3 generating result data describing a visual representation of the eye movements for
4 the multiple individuals, wherein the visual representation corresponds to aggregate eye
5 movement data for the multiple individuals; and
6 promoting the result data to a user-accessible state.
- 1 2. The method of claim 1 wherein promoting the result data to a user-
2 accessible state comprises displaying the result data with a display device.
- 1 3. The method of claim 1 wherein promoting the result data to a user-
2 accessible state comprises storing the result data on an electronically-accessible medium.
- 1 4. The method of claim 1 wherein the visual representation describes as least
2 part of a visual scene viewed by the multiple individuals that has been visually altered
3 based on the data representing the eye movements for the multiple individuals.
- 1 5. The method of claim 4 further comprising aggregating the individual eye
2 tracking data for two or more individuals resulting in aggregate eye tracking data prior to
3 generating the visual representation, wherein the visual representation is altered based on
4 the aggregate eye tracking data.

1 6. The method of claim 4 wherein generating result data describing a visual
2 representation of the eye movements for the multiple individuals comprises generating
3 result data describing a difference between a selected subset of the multiple individuals
4 and the remaining multiple individuals.

1 7. The method of claim 1 wherein the eye movements of the multiple
2 individuals corresponds to the multiple individuals reading information from a display
3 device of an electronic system.

1 8. The method of claim 1 wherein the visual altering comprises blurring the
2 visual representation based on a visual acuity gradient.

1 9. The method of claim 1 wherein the visual altering comprises alpha
2 blending of the visual representation and a colorized representation of the data
3 representing the eye movements for the multiple individuals.

1 10. The method of claim 1 wherein the visual altering comprises altering
2 regions of the visual scene not viewed by an individual.

1 11. The method of claim 1 further comprising providing representations of
2 one or more predetermined states of one or more users in the visual representation.

1 12. The method of claim 11 wherein the predetermined states comprise one or
2 more of: a cursor control selection, a gaze start point, a gaze stop point, pupil data, gaze
3 duration, biofeedback indicators, and mental state.

1 13. The method of claim 1 wherein tracking eye movements of individuals
2 comprises determining a mental state by matching one or more eye movement patterns to
3 one or more eye behavior pattern templates.

1 14. A graphical representation of eye tracking data created according to the
2 method of claim 1.

1 15. An article comprising an electronically-accessible medium having stored
2 thereon data corresponding to a graphical representation created according to the method
3 of claim 1.

1 16. An article comprising an electronically-accessible medium to provide
2 instructions that, when executed, cause one or more electronic systems to:
3 acquire data representing eye movements for multiple individuals;
4 generate result data describing a visual representation of the eye movements for
5 the multiple individuals, wherein the visual representation corresponds to aggregate eye
6 movement data for the multiple individuals; and
7 promote the result data to a user-accessible state.

1 17. The article of claim 16 wherein the instructions that cause the one or more
2 electronic systems to promote the result data to a user-accessible state comprises
3 instructions that, when executed, cause the one or more electronic systems to display the
4 result data with a display device.

1 18. The article of claim 16 wherein the instructions that cause the one or more
2 electronic systems to promote the result data to a user-accessible state comprises
3 instructions that, when executed, cause the one or more electronic systems to store the
4 result data on an electronically-accessible medium.

1 19. The article of claim 16 wherein the visual representation describes as least
2 part of a visual scene viewed by the multiple individuals that has been visually altered
3 based on the data representing the eye movements for the multiple individuals.

1 20. The article of claim 19 further comprising instructions that, when
2 executed, cause the one or more electronic systems to aggregate the individual eye
3 tracking data for two or more individuals resulting in aggregate eye tracking data prior to
4 generating the visual representation, wherein the visual representation is altered based on
5 the aggregate eye tracking data.

1 21. The article of claim 16 wherein the eye movements of the multiple
2 individuals corresponds to the multiple individuals reading information from a display
3 device of an electronic system.

1 22. The article of claim 16 wherein the instructions that cause the one or more
2 electronic systems to generate result data describing a visual representation of the eye
3 movements for the multiple individuals comprises instructions that, when executed, cause
4 the one or more electronic systems to generate result data describing a difference between
5 a selected subset of the multiple individuals and the remaining multiple individuals.

1 23. The article of claim 16 wherein the visual altering comprises blurring the
2 visual representation based on a visual acuity gradient.

1 24. The article of claim 16 wherein the visual altering comprises alpha
2 blending of the visual representation and a colorized representation of the data
3 representing the eye movements for the multiple individuals.

1 25. The article of claim 16 wherein the visual altering comprises altering
2 regions of the visual scene not viewed by an individual.

1 26. The article of claim 16 further comprising instructions that, when
2 executed, cause the one or more electronic systems to provide representations of one or
3 more predetermined states of one or more users in the visual representation.

1 27. The article of claim 26 wherein the predetermined states comprise one or
2 more of: a cursor control selection, a gaze start point, a gaze stop point, pupil data, gaze
3 duration, biofeedback indicators, and mental state.

1 28. The article of claim 16 wherein tracking eye movements of individuals
2 comprises determining a mental state by matching one or more eye movement patterns to
3 one or more eye behavior pattern templates.

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1 29. A method comprising:
2 acquiring data representing eye movements for one or more individuals;
3 generating result data that graphically represents the data representing eye
4 movements for the one or more individuals; and
5 promoting the result data to a user-accessible state.

1 30. The method of claim 29 wherein promoting the result data to a user-
2 accessible state comprises displaying the result data with a display device.

1 31. The method of claim 29 wherein promoting the result data to a user-
2 accessible state comprises storing the result data on an electronically-accessible medium.

1 32. The method of claim 29 wherein the result data that graphically represents
2 the data representing eye movements for the one or more individuals comprises blurring

3 an image based on a visual acuity gradient applied to the data representing eye
4 movements.

1 33. The method of claim 29 wherein the result data that graphically represents
2 the data representing eye movements for the one or more individuals comprises alpha
3 blending of an image and a colorized representation of the data representing the eye
4 movements.

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1 34. An article comprising an electronically-accessible medium to provide
2 instructions that, when executed, cause one or more electronic systems to:
3 acquire data representing eye movements for one or more individuals;
4 generate result data that graphically represents the data representing eye
5 movements for the one or more individuals; and
6 promot the result data to a user-accessible state.

1 35. The article of claim 34 wherein promoting the result data to a user-
2 accessible state comprises displaying the result data with a display device.

1 36. The article of claim 34 wherein promoting the result data to a user-
2 accessible state comprises storing the result data on an electronically-accessible medium.

1 37. The article of claim 34 wherein the result data that graphically represents
2 the data representing eye movements for the one or more individuals comprises blurring

3 an image based on a visual acuity gradient applied to the data representing eye
4 movements.

1 38. The article of claim 34 wherein the result data that graphically represents
2 the data representing eye movements for the one or more individuals comprises alpha
3 blending of an image and a colorized representation of the data representing the eye
4 movements.

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1 39. A method comprising:
2 acquiring data representing eye movements for multiple individuals;
3 generating result data describing a visual representation of the eye movements for
4 the multiple individuals; and
5 modifying the visual scene based, at least in part, on the result data.

1 40. The method of claim 39 wherein the eye movements of the multiple
2 individuals corresponds to the multiple individuals reading information from a display
3 device of an electronic system.

1 41. The method of claim 39 wherein modifying the visual scene comprises
2 modifying a layout of a Web page that provides the visual scene.

1 42. The method of claim 39 wherein modifying the visual scene comprises
2 modifying a layout of an application program that provides the visual scene.

1 43. An article comprising an electronically-accessible medium to provide
2 instructions that, when executed, cause one or more electronic systems to:
3 acquire data representing eye movements for multiple individuals;
4 generate result data describing a visual representation of the eye movements for
5 the multiple individuals; and
6 modify the visual scene based, at least in part, on the result data.

1 44. The article of claim 43 wherein the eye movements of the multiple
2 individuals corresponds to the multiple individuals reading information from a display
3 device of an electronic system.

1 45. The article of claim 43 wherein modifying the visual scene comprises
2 modifying a layout of a Web page that provides the visual scene.

1 46. The article of claim 43 wherein modifying the visual scene comprises
2 modifying a layout of an application program that provides the visual scene.